SEQUENCE LISTING

<110> Kreek, Mary Jeanne
LaForge, Karl Steven

<120> Alleles of the Human Orphanin
FQ/Nociceptin Receptor Gene, Diagnostic Methods Using Said
Alleles, and Methods of Treatment Based Thereon

<130> 600-1-284N

<140> US 09/905,186
<141> 2001-10-09

<150> US 60/218,205
<151> 2000-07-14

<160> 11

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 2602
<212> DNA
<213> homo sapiens

<400> 1
```
ctgccggctc actcggctgc tgcgtctggt ctggcgtctg ctgagaagat cctcttctac      60
cctgctctgc acctgtgctc gactgccagc cggctgaggg cggggggtctc cacggtggtc     120
ccagctccca aggaggttgc agaagtaagg gcctgagccg ctggaggtcg ggtgggggtc      180
ctgctgacag actgcagcaa agcagggcgg gtggagggggg caggaggaag ctgggtccca     240
ggcgtttctg ggtgtgtctc agtctctttt gtgcctgcgt gtgcgtgagg gcaggtttgg      300
gcatttctgt gtgtctgtgt gtgtgacttg tgtccctgca tccctgtgcc tgtgaacacg      360
cgagtggctg tgtgttcatc agtccctgtg ggtggacacg tgtcctgggg tgtagctgcc      420
tccaggcacc ctgtgtgtga gtctctaaac caaatgggac cgtgtccttg cgggtgcatg      480
tgtgtctttg tgttctgtga gtccctgtct gtgcacacgt gtcctcgtgt ctccatgtgt      540
ccctgcatgt gcatgtgtgc ctgtgtgttc tggtgtgtgt gcccgtgtgc ctcagtgtct      600
ctccgctggg cgtgtgtctg gcactgcagc cacttgtctc tgcgctctgt cccaggtacc      660
gtacagagtg gatttgcagg gcagtggcat ggagcccctc ttccccgcgc cgttctggga      720
ggttatctac ggcagccacc ttcagggcaa cctgtccctc ctgagcccca accacagtct      780
gctgccccg catctgctgc tcaatgccag ccacggcgcc ttcctgcccc tcgggctcaa      840
ggtcaccatc gtggggctct acctggccgt gtgtgtcgga gggctcctgg ggaactgcct      900
tgtcatgtac gtcatcctca ggcacaccaa aatgaagaca gccaccaata tttacatctt      960
taacctggcc ctggccgaca ctctggtcct gctgacgctg ccctttccagg gcacggacat     1020
cctcctgggc ttctggccgt ttgggaatgc gctgtgcaag acagtcattg ccattgacta     1080
ctacaacatg ttcaccagca ccttcacccct aactgccatg agtgtggatc gctatgtagc     1140
catctgccac cccatccgtg ccctcgacgt ccgcacgtcc agcaaagccc aggctgtcaa     1200
tgtggccatc tgggccctgg cctctgttgt cggtgttccc gttgccatca tgggctcggc     1260
acaggtcgag gatgaaggtc agtggggtgt cccctcctcc cctcaccagg ctccctggct     1320
cccgggtggc tcctctgggc ccacgtgccc tccacgtctc ctgggcccac tctgaccccg     1380
tttctctccc tgcagagatc gagtgcctgg tggagatccc tacccctcag gattactggg     1440
gcccggtgtt tgccatctgc atcttcctct tctccttcat cgtccccgtg ctcgtcatct     1500
ctgtctgcta cagcctcatg atccggcggc tccgtggagt ccgcctgctc tcgggctccc     1560
gagagaagga ccggaacctg cggcgcatca tcggctggt gctggtggta gtggctgtgt      1620
tcgtgggctg ctggacgcct gtccaggtct tcgtgctggc ccaagggctg ggggttcagc     1680
```

```
cgagcagcga gactgccgtg gccattctgc gcttctgcac ggccctgggc tacgtcaaca      1740
gctgcctcaa ccccatcctc tacgccttcc tggatgagaa cttcaaggcc tgcttccgca      1800
agttctgctg tgcatctgcc ctgcgccggg acgtgcaggt gtctgaccgc gtgcgcagca      1860
ttgccaagga cgtggccctg gcctgcaaga cctctgagac ggtaccgcgg cccgcatgac      1920
taggcgtgga cctgcccatg gtgcctgtca gcccgcagag cccatctacg cccaacacag      1980
agctcacaca ggtcactgct ctctaggcgg acacaccctg ggccctgagc atccagagcc      2040
tgggatgggc ttttccctgt gggccaggga tgctcggtcc cagaggagga cctagtgaca      2100
tcatgggaca ggtcaaagca ttagggccac ctccatggcc ccagacagac taaagctgcc      2160
ctcctggtgc agggccgagg ggacacaagg acctacctgg aagcagctga catgctggtg      2220
gacggccgtt actggagccc gtgcccctcc ctccccgtgc ttcatgtgac tcttggcctc      2280
tctgctgctg cgttggcaga accctgggtg ggcaggcacc cggaggagga gcagcagctg      2340
tgtcatcctg tgcccccat gtgctgtgtg ctgtttgcat ggcagggctc cagctgcctt      2400
cagccctgtg acgtctcctc agggcagctg acaggcttg gcacggcccg ggaagtgcag      2460
caggcagctt ttctttgggg tgggacttgc cctgagcttg gagctgccac ctggaggact      2520
tgcctgttcc gactccacct gtgcagccgg ggccacccca ggagaaagtg tccaggtggg      2580
ggctggcagt ccctggctgc ag                                              2602

<210> 2
<211> 511
<212> DNA
<213> homo sapiens

<400> 2
gtaagggcct gagccgctgg aggtcgggtg ggggtcctgc tgacagactg cagcaaagca        60
gggcgggtgg aggggcagg aggaagctgg gtcccaggcg tttctgggtg tgtctcagtc       120
tcttttgtgc ctgcgtgtgc gtgagggcag gtttgggcat ttctgtgtgt ctgtgtgtgt       180
gacttgtgtc cctgcatccc tgtgcctgtg aacacgcgag tggctgtgtg ttcatcagtc       240
cctgtgggtg dacacgtgtc ctggggtgta gctgcctcca ggcaccctgt gtgtgagtct       300
ctaaaccaaa tgggaccgtg tccttgcggg tgcatgtgtg tctttgtgtt ctgtgagtcc       360
ctgtctgtgc acacgtgtcc tcgtgtctcc atgtgtccct gcatgtgcat gtgtgcctgt       420
gtgttctggt gtgtgtgccc gtgtgcctca gtgtctctcc gctgggcgtg tgtctggcac       480
tgcagccact tgtctctgcg ctctgtccca g                                     511

<210> 3
<211> 144
<212> DNA
<213> homo sapiens

<400> 3
ctgccggctc actcggctgc tgcgtctggt ctggcgtctg ctgagaagat cctcttctac        60
cctgctctgc acctgtgctc gactgccagc cggctgaggg cggggggtctc cacggtggtc      120
ccagctccca aagaggttgc agaa                                             144

<210> 4
<211> 511
<212> DNA
<213> homo sapiens

<400> 4
gtaagggcct gagccgctgg aggtcgggtg ggggtcctgc tgacagactg cagcaaagca        60
gggcgggtgg aggggcagg aggaagctgg gtcccaggcg tttctgggtg tgtctcagtc       120
tcttttgtgc ctgcctgtgc gtgagggcag gtttgggcat ttctgtgtgt ctgtgtgtgt       180
gacttgtgtc cctgcatccc tgtgcctgtg aacacgcgag tggctgtgtg ttcatcagtc       240
cctgtgggtg dacacgtgtc ctggggtgta gctgcctcca ggcaccctgt gtgtgagtct       300
ctaaaccaaa tgggaccgtg tccttgcggg tgcatgtgtg tctttgtgtt ctgtgagtcc       360
ctgtctgtgc acacgtgtcc tcgtgtctcc atgtgtccct gcatgtgcat gtgtgcctgt       420
gtgttctggt gtgtgtgccc gtgtgcctca gtgtctctcc gctgggcgtg tgtctggcac       480
```

```
tgcagccact tgtctctgcg ctctgtccca g                                      511


<210> 5
<211> 511
<212> DNA
<213> homo sapiens


<400> 5
gtaagggcct gagccgctgg aggtcgggtg ggggtcctgc tgacagactg cagcaaagca        60
gggcgggtgg aggggggcagg aggaagctgg gtcccaggcg tttctgggtg tgtctcagtc       120
tcttttgtgc ctgcgtgtgc gtgagggcag gtttgggcat ttctgtgtgt ctgtgtgtgt       180
gacttgtgtc cctgcatccc tgtgcctgtg aacacgcgag tggctgtgtg ttcatcagtc       240
cctgtgggta gacacgtgtc ctggggtgta gctgcctcca ggcaccctgt gtgtgagtct       300
ctaaaccaaa tgggaccgtg tccttgcggg tgcatgtgtg tctttgtgtt ctgtgagtcc       360
ctgtctgtgc acacgtgtcc tcgtgtctcc atgtgtccct gcatgtgcat gtgtgcctgt       420
gtgttctggt gtgtgtgccc gtgtgcctca gtgtctctcc gctgggcgtg tgtctggcac       480
tgcagccact tgtctctgcg ctctgtccca g                                      511


<210> 6
<211> 511
<212> DNA
<213> homo sapiens


<400> 6
gtaagggcct gagccgctgg aggtcgggtg ggggtcctgc tgacagactg cagcaaagca        60
gggcgggtgg aggggggcagg aggaagctgg gtcccaggcg tttctgggtg tgtctcagtc       120
tcttttgtgc ctgcgtgtgc gtgagggcag gtttgggcat ttctgtgtgt ctgtgtgtgt       180
gacttgtgtc cctgcatccc tgtgcctgtg aacacgcgag tggctgtgtg ttcatcagtc       240
cctgtgggtg aacacgtgtc ctggggtgta gctgcctcca ggcaccctgt gtgtgagtct       300
ctaaaccaaa tgggaccgtg tccttgcggg tgcatgtgtg tctttgtgtt ctgtgagtcc       360
ctgtctgtgc acacgtgtcc tcgtgtctcc atgtgtccct gcatgtgcat gtgtgcctgt       420
gtgttctggt gtgtgtgccc gtgtgcctca gtgtctctcc gctgggcgtg tgtctggcac       480
tgcagccact tgtctctgcg ctctgtccca g                                      511


<210> 7
<211> 1829
<212> DNA
<213> homo sapiens


<400> 7
gtaccgtaca gagtggattt gcagggcagt ggcatggagc ccctcttccc cgcgccgttc        60
tgggaggtta tctacggcag ccaccttcag ggcaacctgt ccctcctgag ccccaaccac       120
agtctgctgc ccccgcatct gctgctcaat gccagccacg cgcgccttcct gccccctcgggg     180
ctcaaggtca ccatcgtggg gctctacctg gccgtgtgtg tcggagggct cctgggggaac      240
tgccttgtca tgtacgtcat cctcaggcac accaaaatga agacagccac caatatttac       300
atctttaacc tggccctggc cgacactctg gtcctgctga cgctgccctt ccagggcacg       360
gacatcctcc tgggcttctg gccgtttggg aatgcgctgt gcaagacagt cattgccatt       420
gactactaca acatgttcac cagcaccttc acctaactg ccatgagtgt ggatcgctat        480
gtagccatct gccaccccat ccgtgccctc gacgtccgca cgtccagcaa agcccaggct       540
gttaatgtgg ccatctgggc cctggcctct gttgtcggtg ttcccgttgc catcatgggc       600
tcggcacagg tcgaggatga agagatcgag tgcctggtgg agatccctac ccctcaggat       660
tactggggcc cggtgtttgc catctgcatc ttcctcttct ccttcatcgt ccccgtgctc       720
gtcatctctg tctgctacag cctcatgatc cggcggctcc gtggagtccg cctgctctcg       780
ggctcccgag agaaggaccg gaacctgcgg cgcatcactc ggctggtgct ggtggtagtg       840
gctgtgttcg tgggctgctg gacgcctgtc caggtcttcg tgctggccca agggctgggg       900
gttcagccga gcagcgagac tgccgtggcc attctgcgct ctgcacggc cctgggctac        960
gtcaacagct gcctcaaccc catcctctac gccttcctgg atgagaactt caaggcctgc      1020
```

```
ttccgcaagt tctgctgtgc atctgccctg cgccgggacg tgcaggtgtc tgaccgcgtg    1080
cgcagcattg ccaaggacgt ggccctggcc tgcaagacct ctgagacggt accgcggccc    1140
gcatgactag gcgtggacct gcccatggtg cctgtcagcc cgcagagccc atctacgccc    1200
aacacagagc tcacacaggt cactgctctc taggcggaca caccctgggc cctgagcatc    1260
cagagcctgg gatgggcttt tccctgtggg ccagggatgc tcggtcccag aggaggacct    1320
agtgacatca tgggacaggt caaagcatta gggccacctc catggcccca gacagactaa    1380
agctgccctc ctggtgcagg gccgagggga cacaaggacc tacctggaag cagctgacat    1440
gctggtggac ggccgttact ggagcccgtg cccctccctc cccgtgcttc atgtgactct    1500
tggcctctct gctgctgcgt tggcagaacc ctgggtgggc aggcacccgg aggaggagca    1560
gcagctgtgt catcctgtgc cccccatgtg ctgtgtgctg tttgcatggc agggctccag    1620
ctgccttcag ccctgtgacg tctcctcagg gcagctggac aggcttggca cggcccggga    1680
agtgcagcag gcagcttttc tttggggtgg gacttgccct gagcttggag ctgccacctg    1740
gaggacttgc ctgttccgac tccacctgtg cagccggggc caccccagga gaaagtgtcc    1800
aggtgggggc tggcagtccc tggctgcag                                      1829
```

<210> 8
<211> 1829
<212> DNA
<213> homo sapiens

<400> 8
```
gtaccgtaca gagtggattt gcagggcagt ggcatggagc ccctcttccc cgcgccgttc      60
tgggaggtta tctacggcag ccaccttcag ggcaacctgt ccctcctgag ccccaaccac     120
agtctgctgc ccccgcatct gctgctcaat gccagccacg cgcgccttcct gccctcgggg     180
ctcaaggtca ccatcgtggg gctctacctg gccgtgtgtg tcggagggct cctggggaac     240
tgccttgtca tgtacgtcat cctcaggcac accaaaatga agacagccac caatatttac     300
atctttaacc tggccctggc cgacactctg gtcctgctga cgctgccctt ccagggcacg     360
gacatcctcc tgggcttctg gccgtttggg aatgcgctgt gcaagacagt cattgccatt     420
gactactaca acatgttcac cagcaccttc accctaactg ccatgagtgt ggatcgctat     480
gtagccatct gccaccccat ccgtgccctc gacgtccgca cgtccagcaa agcccaggct     540
gttaatgtgg ccatctgggc cctggcctct gttgtcggtg ttcccgttgc catcatgggc     600
tcggcacagg tcgaggatga agagatcgag tgcctggtgg agatccctac ccctcaggat     660
tactggggcc cggtgtttgc catctgcatc ttcctcttct ccttcatcgt ccccgtgctc     720
gtcatctctg tctgctacag cctcatgatc cggcggctcc gtggagtccg cctgctctcg     780
ggctcccgag agaaggaccg gaacctgcgg cgcatcactc ggctggtgct ggtggtagtg     840
gctgtgttcg tgggctgctg gacgcctgtc caggtcttcg tgctggccca agggctgggg     900
gttcagccga gcagcgagac tgccgtggcc attctgcgct tctgcacggc cctgggctac     960
gtcaacagct gcctcaaccc catcctctac gccttcctgg atgagaactt caaggcctgc    1020
ttccgcaagt tctgctgtgc atctgccctg cgccgggacg tgcaggtgtc tgaccgcgtg    1080
cgcagcattg ccaaggacgt ggccctggcc tgcaagacct ctgagacggt accgcggccc    1140
gcatgactag gcgtggacct gcccatggtg cctgtcagcc cgcagagccc atctacgccc    1200
aacacagagc tcacacaggt cactgctctc taggcggaca caccctgggc cctgagcatc    1260
cagagcctgg gatgggcttt tccctgtggg ccagggatgc tcggtcccag aggaggacct    1320
agtgacatca tgggacaggt caaagcatta gggccacctc catggcccca gacagactaa    1380
agctgccctc ctggtgcagg gccgagggga cacaaggacc tacctggaag cagctgacat    1440
gctggtggac ggccgttact ggagcccgtg cccctccctc cccgtgcttc atgtgactct    1500
tggcctctct gctgctgcgt tggcagaacc ctgggtgggc aggcacccgg aggaggagca    1560
gcagctgtgt catcctgtgc cccccatgtg ctgtgtgctg tttgcatggc agggctccag    1620
ctgccttcag ccctgtgacg tctcctcagg gcagctggac aggcttggca cggcccggga    1680
agtgcagcag gcagcttttc tttggggtgg gacttgccct gagcttggag ctgccacctg    1740
gaggacttgc ctgttccgac tccacctgtg cagccggggc caccccagga gaaagtgtcc    1800
aggtgggggc tggcagtccc tggctgcag                                      1829
```

<210> 9
<211> 1829
<212> DNA
<213> homo sapiens

<400> 9
```
gtaccgtaca gagtggattt gcagggcagt ggcatggagc ccctcttccc cgcgccgttc    60
tgggaggtta tctacggcag ccaccttcag ggcaacctgt ccctcctgag ccccaaccac   120
agtctgctgc ccccgcatct gctgctcaat gccagccacg gcgccttcct gcccctcggg   180
ctcaaggtca ccatcgtggg gctctacctg gccgtgtgtg tcggagggct cctggggaac   240
tgccttgtca tgtacgtcat cctcaggcac accaaaatga agacagccac caatatttac   300
atctttaacc tggccctggc cgacactctg gtcctgctga cgctgccctt ccagggcacg   360
gacatcctcc tgggcttctg gccgtttggg aatgcgctgt gcaagacagt cattgccatt   420
gactactaca acatgttcac cagcaccttc accctaactg ccatgagtgt ggatcgctat   480
gtagccatct gccaccccat ccgtgccctc gacgtccgca cgtccagcaa agcccaggct   540
gtcaatgtgg ccatctgggc cctggcctct gttgtcggtg ttcccgttgc catcatgggc   600
tcggcacagg tcgaggatga agagatcgag tgcctggtgg agatccctac ccctcaggat   660
tactggggcc cggtgtttgc catctgcatc ttcctcttct ccttcatcgt ccccgtgctc   720
gtcatctctg tctgctacag cctcatgatc cggcggctcc gtggagtccg cctgctctcg   780
ggctcccgag agaaggaccg gaacctgcgg cgcatcactc ggctggtgct ggtggtggtg   840
gctgtgttcg tgggctgctg gacgcctgtc caggtcttcg tgctggccca agggctgggg   900
gttcagccga gcagcgagac tgccgtggcc attctgcgct tctgcacggc cctgggctac   960
gtcaacagct gcctcaaccc catcctctac gccttcctgg atgagaactt caaggcctgc  1020
ttccgcaagt tctgctgtgc atctgccctg cgccgggacg tgcaggtgtc tgaccgcgtg  1080
cgcagcattg ccaaggacgt ggccctggcc tgcaagacct ctgagacggt accgcggccc  1140
gcatgactag gcgtggacct gcccatggtg cctgtcagcc cgcagagccc atctacgccc  1200
aacacagagc tcacacaggt cactgctctc taggcggaca cacctgggc cctgagcatc  1260
cagagcctgg gatgggcttt tccctgtggg ccagggatgc tcggtcccag aggaggacct  1320
agtgacatca tgggacaggt caaagcatta gggccacctc catggcccca gacagactaa  1380
agctgccctc ctggtgcagg gccgagggga cacaaggacc tacctggaag cagctgacat  1440
gctggtggac ggccgttact ggagcccgtg cccctccctc cccgtgcttc atgtgactct  1500
tggcctctct gctgctgcgt tggcagaacc ctgggtgggc aggcacccgg aggaggagca  1560
gcagctgtgt catcctgtgc cccccatgtg ctgtgtgctg tttgcatggc agggctccag  1620
ctgccttcag ccctgtgacg tctcctcagg gcagctggac aggcttggca cggcccggga  1680
agtgcagcag gcagcttttc tttggggtgg gacttgccct gagcttggag ctgccacctg  1740
gaggacttgc ctgttccgac tccacctgtg cagccggggc caccccagga gaaagtgtcc  1800
aggtgggggc tggcagtccc tggctgcag                                     1829
```

<210> 10
<211> 1829
<212> DNA
<213> homo sapiens

<400> 10
```
gtaccgtaca gagtggattt gcagggcagt ggcatggagc ccctcttccc cgcgccgttc    60
tgggaggtta tctacggcag ccaccttcag ggcaacctgt ccctcctgag ccccaaccac   120
agtctgctgc ccccgcatct gctgctcaat gccagccacg gcgccttcct gcccctcggg   180
ctcaaggtca ccatcgtggg gctctacctg gccgtgtgtg tcggagggct cctggggaac   240
tgccttgtca tgtacgtcat cctcaggcac accaaaatga agacagccac caatatttac   300
atctttaacc tggccctggc cgacactctg gtcctgctga cgctgccctt ccagggcacg   360
gacatcctcc tgggcttctg gccgtttggg aatgcgctgt gcaagacagt cattgccatt   420
gactactaca acatgttcac cagcaccttc accctaactg ccatgagtgt ggatcgctat   480
gtagccatct gccaccccat ccgtgccctc gacgtccgca cgtccagcaa agcccaggct   540
gtcaatgtgg ccatctgggc cctggcctct gttgtcggtg ttcccgttgc catcatgggc   600
tcggcacagg tcgaggatga agagatcgag tgcctggtgg agatccctac ccctcaggat   660
tactggggcc cggtgtttgc catctgcatc ttcctcttct ccttcatcgt ccccgtgctc   720
gtcatctctg tctgctacag cctcatgatc cggcggctcc gtggagtccg cctgctctcg   780
ggctcccgag agaaggaccg gaacctgcgg cgcatcactc ggctggtgct ggtggtagtg   840
gctgtgttcg tgggctgctg gacgcctgtc caggtcttcg tgctggccca agggctgggg   900
gttcagccga gcagcgagac tgccgtggcc attctgcgct tctgcacggc cctgggctac   960
gtcaacagct gcctcaaccc catcctctac gccttcctgg atgagaactt caaggcctgc  1020
```

```
ttccgcaagt tctgctgtgc atctgccctg cgccgggatg tgcaggtgtc tgaccgcgtg        1080
cgcagcattg ccaaggacgt ggccctggcc tgcaagacct ctgagacggt accgcggccc        1140
gcatgactag gcgtggacct gcccatggtg cctgtcagcc cgcagagccc atctacgccc        1200
aacacagagc tcacacaggt cactgctctc taggcggaca caccctgggc cctgagcatc        1260
cagagcctgg gatgggcttt tccctgtggg ccagggatgc tcggtcccag aggaggacct        1320
agtgacatca tgggacaggt caaagcatta gggccacctc catggcccca gacagactaa        1380
agctgccctc ctggtgcagg gccgagggga cacaaggacc tacctggaag cagctgacat        1440
gctggtggac ggccgttact ggagcccgtg cccctccctc cccgtgcttc atgtgactct        1500
tggcctctct gctgctgcgt tggcagaacc ctgggtgggc aggcacccgg aggaggagca        1560
gcagctgtgt catcctgtgc cccccatgtg ctgtgtgctg tttgcatggc agggctccag        1620
ctgccttcag ccctgtgacg tctcctcagg gcagctggac aggcttggca cggcccggga        1680
agtgcagcag gcagcttttc tttggggtgg gacttgccct gagcttggag ctgccacctg        1740
gaggacttgc ctgttccgac tccacctgtg cagccggggc caccccagga gaaagtgtcc        1800
aggtgggggc tggcagtccc tggctgcag                                          1829
```

<210> 11
<211> 1829
<212> DNA
<213> homo sapiens

<400> 11
```
gtaccgtaca gagtggattt gcagggcagt ggcatggagc ccctcttccc cgcgccgttc          60
tgggaggtta tctacggcag ccaccttcag ggcaacctgt ccctcctgag ccccaaccac         120
agtctgctgc ccccgcatct gctgctcaat gccagccacg gcgccttcct gcccctcggg         180
ctcaaggtca ccatcgtggg gctctacctg gccgtgtgtg tcggagggct cctggggaac         240
tgccttgtca tgtacgtcat cctcaggcac accaaaatga agacagccac caatatttac         300
atctttaacc tggccctggc cgacactctg gtcctgctga cgctgccctt ccagggcacg         360
gacatcctcc tgggcttctg gccgtttggg aatgcgctgt gcaagacagt cattgccatt         420
gactactaca acatgttcac cagcaccttc acccctaactg ccatgagtgt ggatcgctat         480
gtagccatct gccaccccat ccgtgccctc gacgtccgca cgtccagcaa agcccaggct         540
gtcaatgtgg ccatctgggc cctggcctct gttgtcggtg ttcccgttgc catcatgggc         600
tcggcacagg tcgaggatga agagatcgag tgcctggtgg agatccctac ccctcaggat         660
tactggggcc cggtgtttgc catctgcatc ttcctcttct ccttcatcgt ccccgtgctc         720
gtcatctctg tctgctacag cctcatgatc cggcggctcc gtggagtccg cctgctctcg         780
ggctcccgag agaaggaccg gaacctgcgg cgcatcactc ggctggtgct ggtggtagtg         840
gctgtgttcg tgggctgctg gacgcctgtc caggtcttcg tgctggccca agggctgggg         900
gttcagccga gcagcgagac tgccgtggcc attctgcgct tctgcacggc cctgggctac         960
gtcaacagct gcctcaaccc catcctctac gccttcctgg atgagaactt caaggcctgc        1020
ttccgcaagt tctgctgtgc atctgccctg cgccgggacg tgcaggtgtc tgaccgcgtg        1080
cgcagcattg ccaaggacgt ggccctggcc tgcaagacct ctgagacggt accgcggccc        1140
gcatgactag gcgtggacgt gcccatggtg cctgtcagcc cgcagagccc atctacgccc        1200
aacacagagc tcacacaggt cactgctctc taggcggaca caccctgggc cctgagcatc        1260
cagagcctgg gatgggcttt tccctgtggg ccagggatgc tcggtcccag aggaggacct        1320
agtgacatca tgggacaggt caaagcatta gggccacctc catggcccca gacagactaa        1380
agctgccctc ctggtgcagg gccgagggga cacaaggacc tacctggaag cagctgacat        1440
gctggtggac ggccgttact ggagcccgtg cccctccctc cccgtgcttc atgtgactct        1500
tggcctctct gctgctgcgt tggcagaacc ctgggtgggc aggcacccgg aggaggagca        1560
gcagctgtgt catcctgtgc cccccatgtg ctgtgtgctg tttgcatggc agggctccag        1620
ctgccttcag ccctgtgacg tctcctcagg gcagctggac aggcttggca cggcccggga        1680
agtgcagcag gcagcttttc tttggggtgg gacttgccct gagcttggag ctgccacctg        1740
gaggacttgc ctgttccgac tccacctgtg cagccggggc caccccagga gaaagtgtcc        1800
aggtgggggc tggcagtccc tggctgcag                                          1829
```